

Gould Exhibit E

UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF VIRGINIA
Alexandria Division

VOLUME 8 (A.M. portion)

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1 of alleged infringement in this case.

2 Q. Did you include any alleged infringement other than what's
3 represented in the Rightscorp data?

4 A. No, I did not. If I were to do so, that would be
5 considered speculative. And as an expert economist evaluating
6 this issue, it is my duty to not speculate and, instead, to
7 rely upon the evidence that is available.

8 Q. So assuming liability as you did, were you able to
9 calculate the harm to BMG from the alleged infringement?

10 A. Yes, I was. I calculated an upper bound, a maximum of
11 that effect. While it's not possible to calculate a precise
12 amount below that maximum, it is definitely feasible and I did
13 calculate an upper bound of what that effect could be.

14 Q. Are any of these assumptions here arbitrary?

15 A. No, I view them as thoughtful assumptions that form the
16 foundation for the work that I performed to calculate the
17 potential harm to BMG.

18 Q. So the Rightscorp data that's -- actually, let me ask you
19 a separate question first. How did you receive the Rightscorp
20 data?

21 A. A very large electronic file. It has a total of 14
22 million records in it.

23 Q. And that's 14 million -- you refer to them as records.
24 They have also been referred to as infractions.

25 A. Yes. So, records, observations, infractions, or, as I

1 think of it, as rows in a data table. So think of a data table
2 with 14 million rows.

3 Q. And so that's 14 million records. Is that the number that
4 Dr. Bardwell relied on?

5 A. No, he actually relied upon far fewer. He initially put
6 forth a number of approximately 2.4 million records or
7 infractions associated with BMG, and then he revised that again
8 to -- downward to be 1.8 million roughly.

9 Q. What was your understanding at the time of your report
10 about the number of infractions at issue?

11 A. At that point it was roughly 2.4 million.

12 Q. And you said it started at 14 million. Is there any other
13 number that you have seen in play?

14 A. Well, yes. So there is the 14 million, but then if you
15 filter that or isolate that down just to the time periods at
16 issue, then that becomes 7.6 million records.

17 That 7.6 million, when then further filtered by
18 Dr. Bardwell, becomes the 1.8 million infractions or records
19 that are now currently at issue.

20 The analysis I performed was based upon 2.4 million,
21 not 1.8 million. So it's part of why my analysis results in an
22 overstatement or an upper bound.

23 Q. And did you treat -- so you used the Rightscorp records in
24 your analysis. Did you treat those records as uploads or
25 downloads?

1 A. I treated each one of those as a download. So allegedly
2 each of those records, each of those infractions reflects the
3 presence of a work at issue on a computer connected to the Cox
4 network. So arguably, that file or that song or that work got
5 on that computer somehow. And I treat each one of those as it
6 was downloaded by that user over the Cox network.

7 Now, not -- certainly not all of that would have
8 occurred, yet that is part of calculating the upper bound, if
9 you will.

10 Q. Okay. You don't have evidence of those downloads, you
11 just made that assumption for your calculation purposes?

12 A. That's right. I just simply counted each and every
13 observation or record at issue in the Rightscorp data as a
14 download, and in a revenue-generating download.

15 Q. So what impact might a download of one of the works at
16 issue have on BMG?

17 A. Well, potentially, if there is a user that has downloaded
18 a song and if it was done through BitTorrent, if they had not
19 done so in the absence of that download, then they may have
20 instead purchased that work through other channels, through
21 legal channels, or listened to it through streaming or gotten
22 it through another digital download such as iTunes. And in
23 that sense that could have generated revenue for BMG and
24 profits.

25 Naturally there would be less than a 1-to-1 ratio

1 there, so not every person would elect to not obtain it through
2 BitTorrent but then attain access to that song through other
3 channels. Yet, I have for the sake of my analysis assumed that
4 it is 1-to-1. That each and every record would result in a
5 revenue-generating sale for BMG.

6 Q. So again, assuming infringement, how many lost of music a
7 due to downloads could there have been?

8 A. There would be at most, and there should be a slide on
9 this as well, a total of 2.4 million. We can get to it later.

10 Q. I think we are there. 2.4 million. And remind us again
11 what that figure is based on.

12 A. That is based upon the number of infractions that were
13 asserted by BMG and Dr. Bardwell in his analysis for which --
14 when I performed my report. The numbers have recently been
15 reduced to 1.8 million. I am using 2.4 million in the numbers
16 that you are showing here. So naturally there is a bit of a
17 difference, the numbers could be arguably -- that I am
18 presenting arguably adjusted downward as a result.

19 Q. Okay. And I think this is going to play into why you did
20 the calculations you did, but can you talk a little bit about
21 if somebody wanted to listen to a work instead of allegedly
22 downloading it, how else might they do it?

23 A. So there is really a couple of primary ways for users to
24 attain works, aside from not doing it through BitTorrent. So
25 one of those is what I will refer to as digital downloads. So

1 this is acquiring the music as a file through iTunes or Amazon
2 Music or Google Play, one of those where a user downloads the
3 to file to their computer or their device or their iPhone or
4 their Droid device.

5 The other way is through streaming. So there are
6 services such as Spotify and Pandora where users can gain
7 access to and listen to music that gets streamed to their
8 devices, but the music doesn't get stored on their devices. It
9 gets downloaded to it or transferred to it each time it is
10 being listened to.

11 Q. Why did you consider those other methods of music
12 consumption?

13 A. Those are the most similar to any other -- to BitTorrent
14 downloading. So as you can see here in this chart I put
15 together, the red line with the squares, that reflects physical
16 media. So those are things like CDs. And this is on an annual
17 basis. You can see that the sales associated with that have
18 been declining over time, which is not too surprising. There
19 has been a big change in the music industry over the past few
20 years such that streaming, which is the gray line with the
21 circles, that that's been increasing over time tremendously.
22 So that is Spotify and Pandora. Those services, they provide
23 two types of services to consumers: Free and paid.

24 So, Spotify, for example, provides a free service for
25 users to be able to stream service, and then they also provide

1 a premium paid service as well.

2 And streaming in particular has really increased
3 supply of music in the marketplace and fundamentally changed
4 the supply and demand equation for the music industry.

5 Q. And how did you determine how many people might purchase a
6 digital download as opposed to streaming?

7 A. I utilized data from BMG. So this is a table that
8 provides an example of some of those data. So I just have four
9 musical works here as examples. You can see that the data were
10 provided on an annual basis.

11 So for Aretha Franklin, for example, I have data in
12 2013 as well as data in 2014. You can see from BMG that the
13 revenue, that 97.8 percent of revenue in 2013 for that song
14 came from digital downloads. And 2.2 percent came from
15 streaming.

16 In the next year, the percentages changed and there
17 was less to digital downloads, only 70.2 percent, whereas the
18 streaming increased to 29.8 percent.

19 So I looked at each and every individual work in each
20 year to figure out what that allocation is for each of those
21 works, and I used those individual allocations, just like you
22 see here on this table, just except for all of the works.

23 If you were to then look at the overall attribution
24 or division of revenue between downloads and streaming, you
25 would see that 76.3 percent goes to downloads, 23.7 percent

1 goes to streaming.

2 Q. Okay. And we are going to see how that relates to your
3 lost profits calculations.

4 And what does this slide represent?

5 A. So this is helping to demonstrate the different ways in
6 which music is distributed. So the first row is for
7 BitTorrent. And as we have learned, that does not require any
8 additional payments, that you attain the music when accessed
9 via Internet. And you can attain albums or individual songs as
10 the case may be.

11 Most similar to that is streaming and downloads. So
12 streaming has all of those very same characteristics.
13 Downloads, however, do require an additional payment. So if
14 you were to acquire a song from iTunes, for example, typically
15 it runs \$0.99 or \$1.29, something like that.

16 Physical media, of course, is just very different.
17 It typically comes in a CD, that's a full album, and it isn't
18 being delivered straight to a digital or an electronic device.
19 So quite a bit different.

20 Q. Okay. So now let's talk about your analysis of lost
21 units. You said you did not include uploads in lost units,
22 correct?

23 A. I did not.

24 Q. Can you say briefly again why that is?

25 A. There is virtually zero effect that users on the Cox

1 network could potentially have on any uploads.

2 So although there may -- I've seen no evidence, but
3 although there could be uploads of little bits and pieces of
4 the works at issue that are residing on a computer, the odds
5 that that could have an effect on BMG is minuscule, it's
6 virtually zero.

7 Q. And do you have a slide that reflects that?

8 A. I do.

9 Q. Can you just briefly describe what this depicts.

10 A. Sure. So on the left you see a big pie chart. And this
11 is reflecting the global households with Internet access. As
12 we've learned, BitTorrent is a global software and used
13 globally.

14 Cox has a share of Internet households of about
15 .7 percent globally. It's about 5 percent in the United States
16 and about .7 globally. So that is less than 1 percent.

17 Now, if there are users on the Cox network that are
18 seeding or providing little bits and pieces of the works at
19 issue to others, and suppose there are ten of those all total,
20 ten peers throughout the world, the odds or the probability
21 that all ten of those would be on the Cox network is
22 itty-bitty.

23 So you can see the number here, it is 0., lots of
24 zeros, 396 percent. It's a really, really small number.

25 Now, what's interesting -- well, to me as a

1 statistician I suppose -- is that my research indicates that
2 typically songs are not being offered through ten peers, but
3 it's typically more like 100 peers or 1,000 peers. And so, you
4 can imagine that if instead of doing this probability for just
5 ten peers, we were to do it for 100, you can effectively add
6 another 100 zeros to this probability.

7 So the odds that it all would be generating from the
8 Cox network is infinitesimally small. So that means that the
9 effect that Cox could be having on any uploads that could be
10 coming from their network is close to zero, it's something that
11 could be addressed by a single \$1 bill.

12 Q. Thank you, Dr. Sullivan.

13 All right, so let's talk now about revenues
14 associated with lost downloads. So how did you determine lost
15 units -- and again, this all assumes infringement. But how did
16 you determine lost units associated with downloads?

17 A. Yes. As I had mentioned, I start with 2.4 million assumed
18 P2P downloads, so it's actually 2,408,946 downloads. I used
19 that separation or division between digital downloads and
20 streaming of 76.3 percent going to downloads, 23.7 percent
21 going to streaming.

22 That means that there are -- for digital downloads,
23 there would be 1,759,796. And what I'm calling here initiated
24 streams -- and I'll explain that in a moment -- of 632,691.

25 Now, the arithmetic here isn't exact, meaning

1 76.3 percent times 2.4 million is not exactly 1,759,796. And
2 that's simply because when I go through work by work and I look
3 at their revenue, some of them are zero revenue types of works,
4 and so it creates -- there's just a very slight rounding effect
5 that occurs.

6 Q. And this 2.4 million number on the left is what you used
7 at the time of your report, but you said that number is lower
8 now?

9 A. Correct. So that number is now 1.8 million. Thus all of
10 my numbers could be adjusted downwards by approximately
11 one-fourth.

12 Q. Can you describe the next step in your analysis, please.

13 A. Yes, I can. So this is for digital downloads, not the
14 streaming, but the downloads. I took those number of units,
15 the roughly 1.8 million units here, and I multiplied each one
16 of those by a price of \$1.17. This is the -- kind of like an
17 average retail price that's coming out of places such as iTunes
18 and Amazon Music.

19 Now, this would overstate the revenue to BMG because
20 BMG does not get that full retail price, they get -- it's on a
21 wholesale basis.

22 And as we know, the works at issue are compositional
23 works, not for the recording. That means they don't get the
24 entire piece.

25 So here again, this would be overstating or providing

1 an upper bound on what the price would be for each download.
2 But nonetheless utilizing that amount and doing the
3 multiplication, gives revenue of \$2,068,821.

4 Q. Okay. And summarize for us again what that figure
5 reflects.

6 A. That would be lost revenue associated with digital
7 downloads for BMG, assuming liability.

8 Q. And now let's talk about lost streaming as opposed to
9 digital downloads. I think you mentioned something about lost
10 initiated streams. Can you briefly describe that.

11 A. Yes. So for streaming, that occurs over time. It can be
12 from, you know, one month to the next. What I did is I
13 utilized each instance in the Rightscorp data, the first time
14 it appears in the Rightscorp data, from that month forward I
15 counted each of those months as a potential lost streaming
16 month. And so the number of months of streaming is much more
17 than just the 632,000 of initiated streams.

18 So if you were to look on this chart here, you see
19 that the 632,000 initiated streams, those units turn into a
20 number of streaming months of 8,574,659 streaming months.

21 So the way to think about that is there's
22 approximately eight-and-a-half million months worth for each
23 work where it was streamed.

24 Q. Or would have been streamed in your --

25 A. Right, under the assumptions.

1 THE COURT: Mr. Buckley, is this a -- you've got more
2 than three minutes left of direct, I would imagine, huh?

3 MR. BUCKLEY: I do. Do you want me to use the last
4 three minutes and get as far as we can --

5 THE COURT: No. I think that this is a good breaking
6 time.

7 MR. BUCKLEY: Thank you, Your Honor.

8 THE COURT: We're going to break for an hour. We'll
9 back at 2:00 and continue the direct examination of
10 Dr. Sullivan.

11 All right, enjoy your lunch. You're excused, thank
12 you.

13 NOTE: At this point the jury leaves the courtroom;
14 whereupon the case continues as follows:

15 JURY OUT

16 THE COURT: All right, anything we need to discuss
17 before break?

18 MR. BRIDGES: One housekeeping matter, Your Honor.

19 THE COURT: Yes, sir.

20 MR. BRIDGES: This afternoon Cox would intend to
21 provide an offer of proof. We could do it orally, we could do
22 something in writing, whatever. We just wanted to get the
23 Court's direction on how you would like to proceed.

24 THE COURT: You can do it orally on the record. Is
25 it something that you want to have in your hand to show the

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UNITED STATES DISTRICT COURT
EASTERN DISTRICT OF VIRGINIA
Alexandria Division

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BMG RIGHTS MANAGEMENT (US) LLC, :
et al., :
:
Plaintiffs, :
:
: Case No. 1:14-cv-1611
vs. :
:
:
:
COX ENTERPRISES, INC., et al., :
Defendants. :
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VOLUME 8 (P.M. portion)

TRIAL TRANSCRIPT

December 11, 2015

Before: Liam O'Grady, USDC Judge

And a Jury

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1 THE COURT: Yeah. That's a natural way to separate
2 it out. The jury won't have any trouble with that. That's
3 good.

4 MR. WARIN: Thank you very much, Your Honor.

5 THE COURT: All right. Thank you.

6 All right, Joe, let's get our jury.

7 Does somebody want to get Dr. Sullivan? That would
8 be great. Thank you.

9 I was talking -- I'm vertically challenged. It looks
10 like I'm talking to you. I'm actually trying to talk to
11 somebody --

12 JURY IN

13 THE COURT: All right. Please have a seat. I hope
14 you enjoyed your lunch, and we'll proceed with Dr. Sullivan.

15 Mr. Buckley?

16 MR. BUCKLEY: Thank you.

17 RYAN SULLIVAN, PH.D., DEFENDANTS' WITNESS,

18 PREVIOUSLY SWORN, RESUMED

19 DIRECT EXAMINATION (Cont'd.)

20 BY MR. BUCKLEY:

21 Q. Dr. Sullivan, welcome back.

22 A. Thank you.

23 Q. So, Michael, could you bring the slides back up, please?
24 Thank you.

25 So, Dr. Sullivan, when we stopped, you were talking

1 about lost units being converted into streaming months. Can
2 you just reorient -- spend five seconds and reorient us,
3 please?

4 A. Sure. Absolutely. So for all of the assumed lost units,
5 there were about 2.4 million. 76 percent of those is digital
6 downloads, and then roughly 24 percent of those as streaming,
7 and I took every record, every instance of alleged infraction
8 in the Rightscorp data, and from that month forward, I assigned
9 it to be streaming.

10 And so what the 8.5 million reflects is the number of
11 infractions times the number of months for which it would be
12 strained.

13 Q. And then on the next slide, can you describe what you did
14 with that information?

15 A. Yes. So I took that information and I converted it into
16 revenue, so I took the roughly 8.5 million streaming months,
17 and I had to first determine how many streams per month each
18 work would have, and I utilized a figure from Spotify, Spotify
19 being one of the largest streaming providers in the country,
20 and for the top 100 works, top 100 songs at Spotify, they get
21 streamed just over one time per month, 1.066 times per month.

22 Now, we know there's more than 100 works at issue
23 here, and as a result, this would be overstating the number of
24 streams for each work because clearly not all of the works
25 could be within the top 100, but I used this as a metric to

1 make sure that I got an estimate that would be a maximum or an
2 upper bound.

3 I then also had to figure out what the price is that
4 would be received by BMG for each of those streams. Again,
5 that comes from Spotify. It's the high-end estimate of their
6 price that they would pay to BMG. And it's just under 1 cent
7 per stream. It's .0084 dollars, or .8 cents. When I multiple
8 that all together, I get a total of \$76,765, and that's for the
9 total period of time that's at issue here. That would be
10 assuming infringement, the lost revenue associated with
11 streaming.

12 Q. So that's not a monthly figure?

13 A. No, it's not monthly. It's for the entire time period.

14 Q. Dr. Sullivan, how did you calculate total lost revenues to
15 BMG assuming infringement?

16 A. So I took the two values and added them together. So I
17 took that streaming revenue, the potential lost revenue of
18 approximately \$76,000. I added that to the \$2,068,821 that is
19 the potential total lost revenues for downloads. When I add
20 those two together, the total potential lost revenue is
21 \$2,145,585.

22 Q. And that's revenue, not profit?

23 A. Correct.

24 Q. How did you get to profit?

25 A. So I deducted costs. I looked at what the profit margin

1 is for BMG, and, in fact, what I used is what's referred to as
2 an incremental profit margin. This comes up again later, this
3 notion.

4 What incremental means is what are the additional
5 costs or profits that would be observed given the increment,
6 the amount or the size of the change. Here, utilizing BMG
7 data, I was able to identify that the incremental profit margin
8 across the relevant time period here is 38 percent.

9 So when I multiply the 2.1 million by 38 percent, the
10 answer is \$815,979, which reflects the lost profits and
11 potential harm to BMG as a result of the alleged infringement,
12 again assuming Cox is liable.

13 Q. And if Cox is found not to be liable, what's the harm to
14 BMG?

15 A. Well, then it would be zero. This would not apply or be
16 relevant.

17 Q. So under your analysis, Dr. Sullivan, what would the harm
18 to BMG from the alleged infringement be if it could only prove
19 25 percent of its case, 25 percent of the infringements?

20 A. It is proportional. So this is a table that I put
21 together that demonstrates that lost revenues and lost profits
22 are proportional to the amount of infringement that is assumed.
23 It's also proportional to the, you know, amount of conversion,
24 meaning what, you know, what percentage of the records in the
25 Rightscorp data would convert into revenue-generating units,

1 would actually convert into sales.

2 So, for example, if there was a belief that it was
3 only 25 percent that would convert or that there'd only be 25
4 percent of the infringement, then you would multiply the
5 numbers I had previously given by 25 percent. So for lost
6 revenue, 25 percent of 2.1 million is \$536,396.

7 Similarly, 25 percent of lost profits is -- 25
8 percent of lost profits is \$203,995.

9 Q. And the other numbers on this table presumably are just
10 math. It's the percentage times the total there, right?

11 A. Exactly.

12 Q. So, Dr. Sullivan, does your lost profits number
13 represent -- or your lost profits numbers, do they represent
14 the actual amount of damages to BMG here?

15 A. No. These are what I referred to as upper bounds, or
16 maximums. It's the highest amount that it could possibly be,
17 and there are a number of reasons as to why the true answer,
18 even assuming infringement, is lower than these amounts.

19 Q. Can you discuss those?

20 A. Certainly. And I've addressed some of these earlier today
21 as well. So, in essence, I've assumed that the substitution
22 from a file being in the Rightscorp data to converting or
23 substituting to a revenue-generating work is 100 percent, and
24 there's reason to believe that should be less, because going
25 from a user obtaining something for free to something that is a

1 positive price where they have to pay money, most of us, we buy
2 less when the price is higher.

3 It also is overstating the digital downloads that
4 would occur because of -- and the digital download revenue that
5 would occur. I used the retail price of \$1.17 per song, and we
6 know that BMG would actually get less than that amount.

7 It's also overstating the streams per work, because
8 as I mentioned, I'm using the top 100 songs and the amount of
9 those streams as an estimate here, so that this again is an
10 upper bound.

11 And most importantly, I have assumed that each and
12 every record in the Rightscorp data would be considered a
13 separate revenue-generating item, but keep in mind that each
14 record is a separate IP address, port number, song, and date
15 and time. To the extent that there's a ping that happens in a
16 recording of an observation by Rightscorp that happens one
17 right after the other, some of them we see happen within the
18 same hour, nothing new is changed, I'm counting those as that
19 user has obtained that song twice, when that would not have
20 occurred.

21 So I have in that sense overstated the effect. Yet,
22 I have utilized the evidence that has been put forth by BMG in
23 terms of infringement. I take that as an assumption, and I
24 utilize that as my basis for the amount of alleged
25 infringement.

1 Q. So assuming infringement, does this analysis provide a
2 maximum amount of actual damages in this case?

3 A. Yes, it is a maximum amount.

4 Q. Okay. So, Dr. Sullivan, let's switch gears and talk about
5 potential benefits to Cox associated with the alleged
6 infringement here. You're familiar with Dr. Lehr and his
7 testimony, you referred to him earlier?

8 A. Yes. I have reviewed his expert reports, the transcripts
9 of his deposition testimony and trial testimony.

10 Q. And he talks about the potential benefit to Cox, right?

11 A. Yes, he does.

12 Q. Do you agree with his views on that?

13 A. I do not for several reasons. In my view, he has
14 incorrectly included the entire value of Cox's provision of
15 Internet service, even though a small fraction of that could
16 potentially be attributable to the alleged infringement in the
17 works at issue.

18 In addition, he has included voice as well as video
19 services, whereas we know that the alleged infringement on the
20 P2P BitTorrent is through the Internet service, not through
21 video and voice.

22 In my view, he has overstated the value, the lifetime
23 value of each subscriber to Cox, especially as it relates to
24 the alleged infringement, and he has also used some incorrect
25 data in performing those calculations.